Work Order ID 77282

August-27-12 10:48:45 AM

77282

Page 1

Item ID: D212-664-207 Accept *N900040100* Setup Start Revision ID: Item Name: Crosstube Low Standard Aft Start Date: 27/08/2012 Start Oty: 1.00 Cust Item ID: **Required Date:** 10/09/2012 Req'd Qty: 1.00 **Customer:** Reference: Run Process Plan: MUJ Date: 17/08/73 Tooling: Approvals: Date: QC: Date: SPC (Y/N): Date: Sequence ID/ Operation Set Up/ Plan Tool ID Tool# Reject Reject Accept Insp. Work Center ID Description **Run Hours** Code Oty Otv Number Stamp **Draw Nbr Revision Nbr** D212-664-247 Rev B (DEO) 100 0.00 DOCUMENT CONTROL *100* DC 0.00 Memo Document Control Photocopy bluefile and create labels as per PPP D212-664-207 CHG00 110 Pick Kit 0.00 Packaging *110* Packaging 0.00 Memo Packaging 120 0.00 NO/ RM 12-10-17 **BENDING MACHINE - CROSSTUBES** *120* CNC Bend 2 0.00 Memo CNC Alpha 160 Bender

Bend tube as per Dwg D212-664-247 using CNC bender program

NCR: Y	es / No				WORK ORDER NO	N-COI	NFORM	ANCE / UPI	DATE			`•
	ace									QA Closed	Date:	ø
Work Orde	ar.				DISPOSITION				AGAINST	DEPARTMENT	/PROCESS	
Part N	10.				Reworl Scrap Use-as-i Work Order Update	p s	Therm	Skid-tube Machining noforming Large Fab	Crosstube Small Fab Finishing Composite	Rec/Sto	Water Jet od. Eng. Coor. re/Packaging Supplier	Engineering Quality Other
Root				Descri	ption of work order upda	te	Initial	Act	ion	Sign &		
Cause	Date	Step	Qty	(or Non-conformance	Ch	nief Eng	Descr	ription	Date	Verification	QC Inspector
Doc/Data Equip/Tooling Operator Material Setup Other Process Supplier Training Unapproved		FAULT CATEGORY										
						FAUI	LT CATE	GORY	,			
Landir	nding Gear Bending Centre Not Concentric to O/S Cracks Crushed/Crimped Cuffs Heat Treat Inspection Strip in Tube Ripples in Bend			o/s	General Bend BOM/Route Broken/Damaged Burrs Contamination Countersink Cut Too Short		Instruct Mainte Mislabe Misreac	on Incomplete ions Incomplete/l nance led	Jnclear	Ovalized Over/Unde Part Incorre Part Lost/M Part Moved Positioned Power Loss	ect lissing l Wrong	Pressure/Forced Temperature/Cure Weld : Wrong Stock Pulled Other
		ı Bend			Drill Holes		Offset					

Out of Calibration

Out of Sequence

Outside Dimensions

DQA:

Date:

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drawing

Finish

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August-27-12 1	0:48:45 AM				11767							ruge
Item ID: Revision ID:	D212-664-2			Accept	*N	19000	40100)* s	Setup S	Start	*N	S1*
Item Name:	Crosstube Lov	w Standard Aft							9	Stop	*NI	S 2*
Required Date:	27/08/2012 10/09/2012	Start Qty: 1.00 Req'd Qty: 1.00		1* 1*		ust Item ID: ustomer:					ı	. 12
Reference:	- 						2,02)					
Approvals:	Process Pla	ın:	Date:	Tooling	;:	Date	: <u>. </u>	F.		Start	*N	R1*
	QC:	· · · · · · · · · · · · · · · · · · ·	Date:	SPC (Y	/N):	Date	•			Stop	*N	R2*
Sequence ID/ Work Center II)	Operation Description		Set U Run	Jp/ Hours	Tool ID	Fool # Plan Code	Accept Qty	Rejec Qty		Reject Iumber	Insp. Stamp
*130		QC15- Crosstube Dimer	sional Check	0.00	0AS 16 17/10/12	•						•
QC Quality Control		Memo		0.00	* 3 .53							
140				0.00								
1 <i>4</i> ∩		Crosstubes										
Crosstubes		Memo		0.00	\							-
Crosstubes		******	ENSURE PROP	ER JIG POSITIONING	*****							
		1-Drill Rive	t holes as per Dw	g D212-664-247 using	DT8972.***Use T-Pin	***	1(n)	17	-1C) –	15	
		2-Drill pilot	holes in tube as p	oer Dwg D212-664-247	using DT8550 and DT	T8551			,			
		3-Ream hole	to finish size in	tube as per Dwg D212-	664-247							
		4-*** WEAl & Inspect fo 664-247	R LATEX GLOV r surface damage	ES WHEN HANDLING Repair damage within	G CROSSTUBE*** Don limits as per Dwg D2	eburr 12-	JW	12	-10	-2	2	
	4	5-Scribe par 247	t # and batch # us	sing vibrating stylus as	per Dwg D212-664-				•	•	•	

									DQA:	Date:	•
NCR: Y	es / No				WORK ORDER NON-C	CONFORM	MANCE / UP				•
					<u> </u>				QA Closed:	Date:	
Work Orde	ar.				DISPOSITION			AGAINST DE	PARTMENT	/PROCESS	
Part N	lo				Rework Scrap Use-as-is Work Order Update	- 1	Skid-tube Machining noforming Large Fab	Crosstube Small Fab Finishing Composite		Water Jet d. Eng. Coor. re/Packaging Supplier	Engineering Quality Other
Root		T		Descri	tion of work order update	Initial	Ac	tion	Sign &		1
Cause	Date	Step	Qty		or Non-conformance	Chief Eng	3	ription	Date	Verification	QC Inspector
Doc/Data											
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Other [Ŷ	,					
Process							1				
Supplier	<u> </u>						-				
Training											
Unapproved											
					F	AULT CATE	GORY				
Landir	ng Gear				General				-	_	_
	Bending				Bend	Grain			Ovalized		Pressure/Forced
	Centre N	ot Conce	ntric to	o/s	BOM/Route	Hardwa	ire		Over/Under	tolerance	Temperature/Cure
	Cracks				Broken/Damaged	Inspect	ion Incomplete		Part Incorre	ct	Weld
	Crushed	Crimped.			Burrs	Instruct	tions Incomplete/	'Unclear	Part Lost/M	issing	Wrong Stock Pulled
	Cuffs				Contamination	Mainte	enance		Part Moved		•
. [Heat Tre	at	Countersink Mislabeled						Positioned V	Vrong	_
	Inspection	n Strip in	Tube		Cut Too Short	Misread	d		Power Loss/	'Surge	Other
	Ripples i	n Bend			Drill Holes		_				

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drawing

Finish

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Page 3

August-27-12 10:48:45 AM Item ID: D212-664-207 Accept *N900040100* Setup Start **Revision ID: Item Name:** Crosstube Low Standard Aft **Start Date:** 27/08/2012 Start Oty: 1.00 Cust Item ID: **Required Date:** 10/09/2012 Req'd Qty: 1.00 **Customer:** Reference: Run Process Plan: Date: _____ **Approvals:** Tooling: Date: SPC (Y/N): Date: Date: Sequence ID/ Operation Reject Set Up/ Tool ID Tool # Plan Accept Reject Insp. Work Center ID Description Run Hours Code Qty Qty Number Stamp 150 QC5- Inspect part completeness to step on W/O 0.00 *150* QC 0.00 Memo Quality Control *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE** 160 0.00 *160* HandFXtube 0.00 Memo Hand Finishing Crosstubes *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** 1- CLEAN CROSSTUBE WITH WASH'N WIPE 180 Outsource process - NDT per OSI038 4.1 0.00 *120* Outsource2 0.00 Memo Outsource process - NDT *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

Liquid Penetrant Inspection as per QSI 038
Issue P/O: / 1223 LPI as per ASTM 1417
Level 2 Attach copy of NDT results to work order

												DQA:	υa	te:	
NCR:	Yes	/ No				WORK ORDER NON-	COI	NFORM	MANCE / UP	DATE	Ω	- A Closed:	Da	te:	٠.
						DISPOSITION				AGAINST D					
Work Orde Part N	No.					Rework Scrap Use-as-is Work Order Update		Therm	Skid-tube Machining noforming Large Fab	Crosstube Small Fab Finishing Composite			Water Jet d. Eng. Coor. e/Packaging Supplier		Engineering Quality Other
Root					Descri	ption of work order update		Initial	Ac.	tion		Sign &			
Cause		Date	Step	Qty	C	or Non-conformance	Ch	nief Eng	Desc	ription	L	Date	Verificatio	n	QC Inspector
Doc/Data Equip/Tooling Operator Material Setup Other Process Supplier Training Unapproved															
Landing Gear General								LT CATE	GORY						
Landi	*	iear Bending Centre No Cracks Crushed/ Cuffs Heat Trea Inspection	Crimped.		o/s	General Bend BOM/Route Broken/Damaged Burrs Contamination Countersink Cut Too Short		-	on Incomplete ions Incomplete/ enance eled	Unclear	O P P P	ovalized over/Under art Incorrec art Lost/Mi art Moved ositioned W ower Loss/S	ct ssing Vrong		Pressure/Forced Temperature/Cure Weld Wrong Stock Pulled Other

Offset

Out of Calibration

Out of Sequence

Outside Dimensions

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Ripples in Bend

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drill Holes

Drawing

Finish Folio August-27-12 10:48:45 AM

D212-664-207 Item ID: Accept *N900040100* Setup Start **Revision ID:** Item Name: Crosstube Low Standard Aft **Start Date:** 27/08/2012 Start Qty: 1.00 Cust Item ID: **Required Date:** 10/09/2012 Req'd Qty: 1.00 **Customer:** Reference: Run Approvals: Process Plan: _____ Date:____ Tooling: Date: SPC (Y/N): _____ Date: Date: Sequence ID/ Operation Set Up/ Tool # Plan Tool ID Reject Accept Reject Insp. Work Center ID Description **Run Hours** Qty Code Number Stamp 190 Receive & Inspect for Damage & Mat'l Certs 0.00 Packaging *100* Packaging 0.00 Memo Packaging *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Ensure copy of NDT results attached to work order. 200 QC5- Inspect part completeness to step on W/O 0.00 *200* QC 0.00 Memo Quality Control *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Inspect for damage & ensure results are as per Dwg D212-664-207 204 Crosstubes Chemical Conversion 0.00*204* RM 12-10-24 HandFXtube 0.00 Memo Hand Finishing Crosstubes *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

1- PRESSURE WASH AND THEN USE WASH'N WIPE TO CLEAN CROSSTUBE AND CUFF BEFORE CHEMICAL CONVERSION

											DQA:	Date:	•
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											QA Closed:	Date:	
Work Ord	or.					DISPOSITION				AGAINST DE	PARTMENT	/PROCESS	
Work Ora	٠				· · · · · · · · · ·	Rework	7		Skid-tube	Crosstube]	Water Jet	Engineering
Part I	No.					Scrap	1	1	Machining	Small Fab	Pro	d. Eng. Coor.	Quality
	-				-	Use-as-is			noforming	Finishing	Rec/Sto	re/Packaging	Other
NCR I	No. ِ					Work Order Update]		Large Fab	Composite]	Supplier	
Root					Descri	ption of work order update	П	Initial	Act	tion	Sign &		
Cause		Date	Step	Qty	(or Non-conformance	Ch	nief Eng	Desc	ription	Date	Verification	QC Inspector
Doc/Data													
Equip/Tooling	Ш												
Operator													
Material	Ш												
Setup	Ш												
Other	Ш												
Process	Ш												
Supplier							İ						
Training	Ш						-						
Unapproved													
						F	AUL	LT CATE	GORY				
Landi	_				_	General		,		_	7	_	7
	-	Bending				Bend		Grain			Ovalized		Pressure/Forced
	Centre Not Concentric to O/S BOM/Rou							Hardwa			Over/Under	_	Temperature/Cure
	Cracks Broken/Damaged							Inspecti	on Incomplete		Part Incorre	ct	Weld
	Crushed/Crimped. Burrs							Instruct	ions Incomplete/	Unclear	Part Lost/M	issing	Wrong Stock Pulled
	\vdash	Cuffs				Contamination		Mainte	•/		Part Moved		
	Ш	Heat Trea	it			Countersink		Mislabe	led		Positioned \	Vrong	7
	Ш	Inspectio	n Strip in	Tube		Cut Too Short		Misread	I		Power Loss,	'Surge	Other
	Ripples in Bend Drill Holes Offset												

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drawing

Finish

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

77282

Page 5

August-27-12	10:48:45 AM	76 Z 12 10 F	10		/0/					rage 3
Item ID: Revision ID:	D212-664-2			Accept	*N900	040100)* s	etup Star	^t *N	S1*
Item Name:	Crosstube Lo	w Standard Aft						Stop	, *N	S2*
Start Date:	27/08/2012	Start Qty: 1.00	*1*		Cust Item I	ID:				. 1/
Required Date	: 10/09/2012	Req'd Qty: 1.00	*1*		Customer:					
Reference:			•							
Approvals:		an:				ate:	R	tun Star Stop	" IV	R1*
	QC		Date:	_ SPC (1/N):	D:	ate:			*N	R2*
Sequence ID/ Work Center I	D	Operation Description		Set Up/ Run Hours	Tool ID	Tool # Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
206		QC7-Inspect Chemical	Conversion Coat	0.00	Δ0					•
206 QC Quality Control		Memo *** WEAR	LATEX GLOVES WHEN		16 12/10/16 UBE***					
210		Countries		0.00						
210 Crosstubes		Crosstubes		0.00				Ø	_6_	AI
Crosstubes		Memo *** WEAR	LATEX GLOVES WHEN		UBE***					12-10-25
		1-Rivet and	assemble Cuffs with T-Pin 247, with Sika flex in Betw	n in the through bolt hole						

A/R SIKAFLEX -241/-291 BATCH: 123025

										DQA:	Dat	e: •
NCR: Y	es / No			ATE								
										QA Closed:	Dat	e: •
Work Orde	or.				DISPOSITION				AGAINST DE	PARTMENT	/PROCESS	
Part N	lo				Rework Scrap Use-as-is Work Order Update]	N Therm	Skid-tube Machining oforming Large Fab	Crosstube Small Fab Finishing Composite	4	Water Jet d. Eng. Coor. re/Packaging Supplier	Engineering Quality Other
Root				Descri	otion of work order update	Init	tial	Acti	on	Sign &		
Cause	Date	Step	Qty		or Non-conformance	Chief	f Eng	Descri	ption	Date	Verification	QC Inspector
Doc/Data												
Equip/Tooling							-					
Operator												
Material												
Setup							i					
Other [**						
Process												
Supplier [
Training						İ						
Unapproved												
							CATEG	ORY				
Landir	ng Gear				General			**		_	_	
+	Bending			Bend	G	rain			Ovalized		Pressure/Forced	
	Centre Not Concentric to O/S BOM/Route					На	ardwar	e		Over/Under	tolerance	Temperature/Cure
	Cracks				Broken/Damaged	In	spectio	on Incomplete		Part Incorre	ct	Weld
	Crushed/	Crimped.			Burrs	[]In	structi	ons Incomplete/U	nclear	Part Lost/M	issing	Wrong Stock Pulled
	Cuffs				Contamination	М	1ainte	nance		Part Moved		
	Heat Trea	at			Countersink	М	islabel	ed		Positioned \	N rong	
	Inspectio	n Strip in	Tube		Cut Too Short	М	lisread			Power Loss,	/Surge	Other
Ī	Ripples in	Bend			Drill Holes		ffset			_	'	

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drawing

Finish

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

PAINT:

Start Time: 2:00 Finish Time: 3:00

August-27-12 1	0:48:45 AM		_		(1)						C	
Item ID: Revision ID: Item Name:	D212-664-2 Crosstube Lo	07 w Standard Aft	<u>-</u>	Accept	*N900	040	100) *	Setup Sta	I/I	S1*	
Start Date: Required Date: Reference:	27/08/2012 10/09/2012	Start Qty: 1.00 Req'd Qty: 1.00	*1* *1*		Cust Item I Customer:	D:				IVI	3 /	
Approvals:	Process Pla	an:	Date:	Tooling: SPC (Y/N):		ate:		F	Run Sta Sto	1/1	R1* R2*	
Sequence ID/ Work Center II 215 *215* QC Quality Control)		·	Set Up/ Run Hours 0.00 0.00 HANDLING CROSSTU	Tool ID	Tool#	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp	_
*220 *220 *220 *SprayPaint Spray Painting		1-Prime insi	LATEX GLOVES WHEN de and outside crosstube a ide crosstube with White I		BE***			1			05 05	_la 10 ag

											DQA:	Date	
NCR:	Yes	/ No				WORK ORDER NON-C	100	NFORM	AANCE / UP		QA Closed:	Date	<i>:</i>
Work Ord	or.					DISPOSITION				AGAINST DE	PARTMENT,		
Part I	No.					Rework Scrap Use-as-is Work Order Update		Therm	Skid-tube Machining noforming Large Fab	Crosstube Small Fab Finishing Composite	4	Water Jet d. Eng. Coor. re/Packaging Supplier	Engineering Quality Other
Root					Descri	ption of work order update		nitial	Ac	tion	Sign &		
Cause		Date	Step	Qty	(or Non-conformance	Ch	ief Eng	Desc	cription	Date	Verification	QC Inspector
Doc/Data Equip/Tooling Operator Material Setup Other Process Supplier Training Unapproved	ling												
	4						AUL	T CATE	GORY				
Landi		1			_	General		1		_	7	F	¬
		Bending Centre Not Concentric to O/S Cracks Crushed/Crimped Cuffs Heat Treat Inspection Strip in Tube Ripples in Bend Torque Waves in Extrusion				Bend BOM/Route Broken/Damaged Burrs Contamination Countersink Cut Too Short Drill Holes		Instruct Mainte Mislabe Misread Offset	on Incomplete ions Incomplete/ nance led	/Unclear	Ovalized Over/Under Part Incorre Part Lost/M Part Moved Positioned V Power Loss/	ct issing Vrong	Pressure/Forced Temperature/Cure Weld Wrong Stock Pulled Other
		Torque W	aves in E	extrusio	n	Drawing	1	Out of 0	Calibration				

Out of Sequence

Outside Dimensions

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Turning Sequence

Wave/Twist in Tube

Finish

Page 7 August-27-12 10:48:45 AM Item ID: D212-664-207 Accept *N900040100* Setup Start **Revision ID:** Item Name: Crosstube Low Standard Aft *1* Start Date: 27/08/2012 Start Oty: 1.00 Cust Item ID: **Required Date:** 10/09/2012 Req'd Qty: 1.00 **Customer:** Reference: Run Process Plan: **Approvals:** Date: Tooling: Date: Date: SPC (Y/N): Date: ____ Sequence ID/ Operation Set Up/ Tool ID Tool # Plan Accept Reject Reject Insp. **Work Center ID** Description **Run Hours** Code Qty Qty Number Stamp 230 QC14- Inspect Spray Paint 0.00 *230* AT 12-10. 0.00 Memo Quality Control Wrap in plastic bag to protect from scratches 240 0.00 Crosstubes *240* Crosstubes

Memo

0.00

Crosstubes

1- Assemble as per Dwg D212-664-247

1-Abrade mating surfaces of support and crosstube with 400 grit sandpaper. clean the area with 4105S wash 'n' wipe

2-Install supports with Proseal 890 per DSI9563 and QSI 015 A/R Proseal 890 Batch: 123103

3- Torque bolts as per dwg

NCR:	·													
											QA Closed:	Date:	•	
Work Ord	er:					DISPOSITION]		·	AGAINST DE	PARTMENT/			
Part I	No.					Rework Scrap Use-as-is		r	Skid-tube Machining noforming	Crosstube Small Fab Finishing	₹	Water Jet J. Eng. Coor. e/Packaging	Engineering Quality Other	
NCR I	No.					Work Order Update]		Large Fab	Composite]	Supplier		
Root					Descr	ription of work order update		nitial	Act	tion	Sign &			
Cause		Date	Step	Qty		or Non-conformance	Ct	ief Eng	Desc	ription	Date	Verification	QC Inspector	
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etup							İ	-						
ther														
rocess														
upplier													1	
raining														
napproved														
	. 7						FAUI	T CATE	GORY					
Landi	ng (Gear				General		-			-		_	
		Bending				Bend		Grain			Ovalized		Pressure/Forced	
		Centre No	ot Concer	ntric to (o/s	BOM/Route		Hardwa	re		Over/Under	tolerance	Temperature/Cure	
		Cracks				Broken/Damaged		Inspecti	on Incomplete		Part Incorred	t	Weld	
		Crushed/0	Crimped.			Burrs		Instruct	ions Incomplete/	'Unclear	Part Lost/Mi	ssing	Wrong Stock Pulled	
		Cuffs				Contamination		Mainte	nance		Part Moved		_	
		Heat Trea	it		Γ	Countersink		Mislabe	led		Positioned V	Vrong	_	
		Inspection	n Strip in	Tube		Cut Too Short		Misread	I		Power Loss/	Surge	Other	
		Ripples in	Bend		Γ	Drill Holes	Offset							
		Torque W	aves in E	xtrusio	n	Drawing		Out of 0	Calibration					
	Г	Turning S	equence			Finish		Out of S	equence					
		Wave/Tw	ist in Tub	oe .		Folio	Outside Dimensions							

DQA:

Date:

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Quality Control

77282

Page 8

August-27-12 10:48:45 AM Item ID: D212-664-207 Accept *N900040100* Setup Start **Revision ID:** Item Name: Crosstube Low Standard Aft **Start Date:** 27/08/2012 Start Qty: 1.00 **Cust Item ID:** Required Date: 10/09/2012 Req'd Qty: 1.00 **Customer:** Reference: Run Approvals: Process Plan: _____ Date: ____ Tooling: Date: Stop QC: _____ Date: ____ SPC (Y/N): Date: Sequence ID/ Operation Set Up/ Tool ID Tool # Plan Reject Accept Reject Insp. Work Center ID Description **Run Hours** Code Qty Qty Number Stamp 250 QC5- Inspect part completeness to step on W/O *250* QC Memo Quality Control 255 Pick Kit 0.00 *255* Packaging 0.00 Memo Packaging 260 QC4- 100% Inspect kits for completeness *260*

0.00

Memo

	DQA:	Date:	•
WORK ORDER NON CONFORMANCE / LIDDATE	-	· —	

IVCK:	res	/ 1110				WORK ORDER NOIS-		MINIMITEL / OF	DAIL	QA Closed:	Date	· ·
Work Orde	or.					DISPOSITION			AGAINST DE	PARTMENT,	/PROCESS	
	•					Rework Scrap		Skid-tube Machining	Crosstube Small Fab	4	Water Jet	Engineering Quality Other
NCR I	No.					Use-as-is Work Order Update] Ine	ermoforming Large Fab	Finishing Composite	Rec/Sto	re/Packaging Supplier	Other
Root					Descri	ption of work order update	Initia	A	ction	Sign &		
Cause	ļ	Date	Step	Qty		or Non-conformance	Chief E	ng Des	cription	Date	Verification	QC Inspector
Doc/Data												
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Material												
Setup		_										
Other												
Process												
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	${}$	Bending			<u> </u>	Bend	Grai			Ovalized		Pressure/Forced
<u> </u>	-	Centre No	ot Concei	ntric to	o/s	BOM/Route	—	ware		Over/Under	}	Temperature/Cure
		Cracks				Broken/Damaged		ection Incomplete	<u></u>	Part Incorre	F-	Weld
	L	Crushed/Crimped				Burrs ,	 	uctions Incomplete	/Unclear	Part Lost/M	· L	Wrong Stock Pulled
	_	Cuffs				Contamination	\vdash	ntenance		Part Moved		
	L	Heat Treat				Countersink	 	abeled		Positioned		
	Inspection Strip in Tube					Cut Too Short	Misr			Power Loss,	/Surge	Other
	Ripples in Bend					Drill Holes	Offs					
	<u> </u>	Torque W	aves in E	extrusio	n L	Drawing	Out	of Calibration				
	L	Turning S	equence			Finish	Out	of Sequence				
]		Wave/Tw	ist in Tub	эe		Folio	Outs	ide Dimensions				

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Approvals:

77282

Page 9

Setup Start *NS1*

Stop *NS2*

Cust Item ID:

N900040100

Customer:

Process Plan: _____ Date: ____ Date: ____ Pate: ____ Process Plan: ____ Process Plan: ____ Date:

: _____ Date: ___ SPC (Y/N): __ Date:

Accept

Sequence ID/ **Operation** Set Up/ Tool ID Tool # Plan Reject Accept Reject Insp. **Work Center ID** Description **Run Hours** Code Qty Qty Number Stamp 270 *270* Packaging Packaging 0.00 Memo

Packaging Identify and pack for shipping as per PPP D212-664-207

280 QC21- Final Inspection - Work Order Release 0.00

280 QC Memo 0.00

Quality Control Memo 0.00

N/2-10-31

											DQA:	Date:	ir
NCR:	Yes	/ No				WORK ORDER NON-			•				
									_		QA Closed:	Date:	·
Work Ord	er:					DISPOSITION				AGAINST DE	PARTMENT	/PROCESS	
Part No						Rework Skid-tube Crosstube Scrap Machining Small Fab Use-as-is Thermoforming Finishing Work Order Update Large Fab Composite				-4	Water Jet od. Eng. Coor. re/Packaging - Supplier	Engineering Quality Other	
NCR	NO.					work Order Opdate			raige rau	Composite	J	3upplie!	لــا لـ
Root Cause		Date	Step	Qty		ption of work order update or Non-conformance	- 1	Initial nief Eng	Actio Descrip		Sign & Date	Verification	QC Inspector
Doc/Data	T	Date	step	Qty		or Non-comormance	+	iici Liig	Descrip		Date	•	QC INSPECTO
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Operator.													
Material								_					
Setup	\vdash							* *					
Other *													
Process													
Supplier													
Training	\vdash		•							•		· ·	
Unapproved	Г												
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Land	ing (Gear				General						·	
		Bending				Bend		Grain			Ovalized		Pressure/Forced
	Centre Not Concentric to O/S					BOM/Route		Hardwa	re		Over/Unde	r tolerance	Temperature/Cure
		Cracks				Broken/Damaged		Inspecti	ion Incomplete		Part Incorre	ect	Weld
	Crushed/Crimped.					Burrs		Instruct	ions Incomplete/U	nclear	Part Lost/N	1issing	Wrong Stock Pulled
_		Cuffs				Contamination		Mainte	enance		Part Moved		
		Heat Trea	at			Countersink		Mislabe	eled		Positioned Wrong		_
] `		Inspectio	n Strip in	Tube		Cut Too Short		Misread	d		Power Loss	/Surge	Other

Offset

Out of Calibration

Out of Sequence

Outside Dimensions

Ripples in Bend

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drill Holes

Drawing

Finish Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Picklist Print

August-27-12 10:48:50 AM

Work Order ID: 77282

77282

Parent Item:

D212-664-207

D212-664-207

Parent Item Name: Crosstube Low Standard Aft

Start Date: 27/08/2012

Required Date: 10/09/2012

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev:A New Issue 07.09.12 EC verified by: JLM

IPP Rev:B ECN 1100p 08-01-11 DD verified by: EC IPP Rev:C ECN 1121 08-02-25 DD verified by:eC

IPP Rev: D QC5 replaced by QC15 at step 5 KJ Verified by: ec

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Status Issued
D212-664- 207TRNRevA		Manufactured	 No	R9	6274	110	Each	0.0000	1 6	1	МО	12/10/16
*D212-664	4-207TF	RNRevA	*	<i>D</i> 0	162701				**	·		
D3660-1		Manufactured	No			140	Each	20.0000	2	2		
D3660-1	•								**			

Location	Loc Qty	Loc Code
LG	2	
80359	2	
ST477	10	
(87445)	10	
ST482	8	
53501	1	
76983	1	
88394	6	

				•					DQA:	Date:	•		
NCR: Yes	s / No				WORK ORDER NON-CONFORMANCE / UPDATE QA Closed: Date:								
Work Order:					DISPOSITION		AGAINST DEPARTMENT/PROCESS						
Part No					Rework Scrap Use-as-is Work Order Update	Therm	Skid-tube Machining noforming Large Fab	Crosstube Small Fab Finishing Composite		Water Jet d. Eng. Coor. re/Packaging Supplier	Engineering Quality Other		
Root				Descri	ption of work order update	Initial	A	ction	Sign &				
Cause	Date	Step	Qty	(or Non-conformance	Chief Eng	Des	cription	Date	Verification	QC Inspector		
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Landing Gear General Pressure/Forced Bend Grain Ovalized Bending BOM/Route Over/Under tolerance Temperature/Cure Centre Not Concentric to O/S Hardware Broken/Damaged Inspection Incomplete -Part Incorrect Weld Cracks Wrong Stock Pulled Burrs Part Lost/Missing Crushed/Crimped. Instructions Incomplete/Unclear Part Moved Cuffs Contamination Maintenance Mislabeled Positioned Wrong Heat Treat Countersink Inspection Strip in Tube Misread Power Loss/Surge Other Cut Too Short Ripples in Bend Drill Holes Offset Torque Waves in Extrusion Drawing Out of Calibration Finish Out of Sequence Turning Sequence

Outside Dimensions

FAULT CATEGORY

Wave/Twist in Tube

Page 2

· Picklist Print

August-27-12 10:48:50 AM

Work Order ID: 77282

Parent Item:

D212-664-207

Parent Item Name: Crosstube Low Standard Aft

Purchased

Manufactured

No

77282 *D212-664-207*

Start Date: 27/08/2012

Required Date: 10/09/2012

Start Qty: 1.00

Required Qty: 1.00

A 12-10-25

Each

**

796.0000

CR3212-4-06

CR3212-4-06

	•		
Location	Loc Qty	Loc Code	
ST329	503		
<u> </u>	503		
ST330	240		
120521	- 40		
122141	200		
ST331	53		
112492	18		
112794	8		
119717	27		

220

240 Each 162.0000 **

D3595-063-530

RUBBER CUSHION

D3595-063-530

Location .	Loc Oty	Loc Code	
LG	50		
79932	13		
82656	37		
LG051	73		
87833	73		
MAT052	39		
63407	6		
67185	6		
70067	18		
72745	2		
75783	7		

												DQA:	Date	e: _	. •
NCR:	Yes	/ No				WORK ORDER NON-C	100	NFORM	/IANCE / UPI	DATE		-		•	•
										· ··-	(QA Closed:	Date	9:	
Work Orde	ar.					DISPOSITION				AGAINST DE	ΕP	PARTMENT/PROCESS			
Part f	 No					Rework Scrap Use-as-is Work Order Update	Machining Small Fab Thermoforming Finishing					Water Jet Prod. Eng. Coor. Rec/Store/Packaging Supplier			Engineering Quality Other
Root					Descri	t ption of work order update		Initial	Act	ion	Т	Sign &	···		
Cause		Date	Step	Qty		or Non-conformance	Ch	nief Eng	Descr	ription		Date	Verification		QC Inspector
Doc/Data Equip/Tooling Operator Material												9			
Setup Other															
Process													•		
Supplier													•		
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Landi	ng G	ear				General		_					_		
	$\boldsymbol{\vdash}$	Bending Centre Not Concentric to O/S				Bend BOM/Route		Grain Hardwa	re			Ovalized Over/Under tolerance			Pressure/Forced Temperature/Cure
	\vdash	Cracks				Broken/Damaged		Inspecti	on Incomplete			Part Incorred	F		Weld
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	Щ	Cuffs				Contamination		Mainte			-	Part Moved			
	\vdash	Heat Trea				Countersink		Mislabe		L	Positioned Wrong			1	
	$\boldsymbol{\vdash}$	nspection	•	Tube	<u> </u>	Cut Too Short	Misread			Power Loss/Surge			Other		
	Ripples in Bend					Drill Holes		Offset							

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence
Wave/Twist in Tube

Torque Waves in Extrusion

Drawing

Finish

August-27-12 10:48:50 AM

Work Order ID: 77282 Parent Item:

D212-664-207

Parent Item Name: Crosstube Low Standard Aft

77282 *D212-664-207*

Start Date: 27/08/2012

Required Date: 10/09/2012

Start Qty: 1.00

2

Required Qty: 1.00

Manufactured

240

Loc Oty

23

2

23 0000

2 **

D2940-1

Support

MS21920-28

D2940-1

Purchased

No

Location

LG052

79118 82657 87921 240

20 Each

Each

78.0000

Loc Code

Loc Code

**

Clamp(per MIL-DTL-8783C)

Manufactured No

Location Loc Qty FG 5 105884 5 LG050 55 118713 3 120054 2 122518 50 LG051 18 121440 8 122204 10 255 Each

13.0000 **

D3428-1

Placard

Location Loc Qty ST042 13 83582 85228 12 Loc Code

NCR:	NCR: Yes / No WORK ORDER NON-CONFORMANCE / UPDATE													
											QA Closed:	Date	•	
Work Ord	er:					DISPOSITION				AGAINST DE	PARTMENT/PROCESS			
Part No						Rework Scrap Use-as-is Work Order Update Skid-tube Machining Thermoforming Large Fab Crosstube Small Fab Thermoforming Composite					ì	Water Jet d. Eng. Coor. re/Packaging Supplier	Engineering Quality Other	
Root					Descri	ption of work order update		Initial	Act	ion	Sign &			
Cause		Date	Step	Qty	(or Non-conformance	Ch	ief Eng	Descr	iption	Date	Verification	QC Inspector	
Doc/Data														
Equip/Tooling	Ш													
Operator	Щ													
Material	Ш													
Setup	Ш		·	į										
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Supplier	\vdash		i											
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Unapproved			<u> </u>	<u> </u>			<u> </u>	T CATE	CORV		l	<u> </u>		
Landi	na G	Geor				General F	AUL	.i CATE	GORT					
Lanui	_	Bending				Bend	Г	Grain		Γ-	Ovalized	Г	Pressure/Forced	
	-	Centre No	nt Conce	ntric to		BOM/Route	-	Hardwa	re		Over/Under	tolerance	Temperature/Cure	
	\vdash	Cracks	or concer	Terre to), -	Broken/Damaged		+	on Incomplete	-	Part Incorre	⊢	Weld	
	\vdash	Crushed/0	Crimped			Burrs		1	ions Incomplete/l	Inclear	Part Lost/M		Wrong Stock Pulled	
		Cuffs				Contamination		Mainte	·		Part Moved	_		
	\vdash	Heat Treat				Countersink		Mislabe			Positioned V	Vrong		
	-	Inspection		Tube		Cut Too Short		Misread			Power Loss/		Other	
	-	Ripples in				Drill Holes		Offset				- L	·	
		Torque W	aves in E	xtrusio	n	Drawing		Out of Calibration					· · · · · · · · · · · · · · · · · · ·	
		Turning Sequence				Finish		Out of 9	Sequence					

Outside Dimensions

DQA:

Date:

Wave/Twist in Tube

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

August-27-12 10:48:50 AM

. Work Order ID: 77282

Parent Item:

MS21042L6

D212-664-207

Parent Item Name: Crosstube Low Standard Aft

77282 *D212-664-207*

Start Date: 27/08/2012

Required Date: 10/09/2012

Start Oty: 1.00 Required Qty: 1.00

869.0000

Loc Code

**

**

SmP

AN960JD616

NAS1149D0663J Purchased

Purchased

Purchased

No

No

No

Location

Washer "AN6-40A

"Bolt

SMS

Location Loc Qty 314 578 122441 578 ST300 291 117677 25 118384 3 118927 48 119075 15 120308 200 255 Each

255

Each

255 Each

122.0000

Loc Code

0.0000

**

12244

ST340 50 122416 50 ST342 72 120187 66 120833 4 121827 2

Loc Qty

122416

August-27-12 10:48:50 AM

										DQA:	Date	e:	•	
NCR:	Yes / No)			WORK ORDER NON-C	100	NFORM	AANCE / UPE	DATE	QA Closed:	Date	e·	•	
					DISPOSITION				AGAINST DE		PARTMENT/PROCESS			
Work Orde	er:					,		·1		1	•			
Part N	No		-		Scrap Machining Small Fab			Crosstube Small Fab Finishing	Water Jet Prod. Eng. Coor. Rec/Store/Packaging			Engineering Quality Other		
NCR N	No				Work Order Update Large Fab Composite				Composite					
Root			T	Descri	ption of work order update		Initial	Act	ion	Sign &				
Cause	Date	Step	Qty	C	or Non-conformance	Ch	nief Eng	Descr	iption	Date	Verification		QC Inspector	
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Landi	ng Gear				General					_	_			
	Bendir	g			Bend		Grain			Ovalized			Pressure/Forced	
	Centre	Not Conce	ntric to	o/s	BOM/Route		Hardwa	re		Over/Unde	r tolerance	1	Temperature/Cure	
	Cracks				Broken/Damaged		Inspecti	on Incomplete		Part Incorre	ect]\	Weld	
	Crushe	d/Crimped			Burrs		Instruct	ions Incomplete/l	Jnclear	Part Lost/N	1issing [Wrong Stock Pulled	
	Cuffs				Contamination		Mainte	nance		Part Moved	1			
	Heat T	reat			Countersink		Mislabe	led		Positioned	Wrong			
	Inspec	tion Strip ir	1 Tube		Cut Too Short		Misread	i		Power Loss	/Surge	\Box	Other	
	Ripples in Rend				Drill Holes		Offset				•			

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence
Wave/Twist in Tube

Torque Waves in Extrusion

Drawing Finish

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Picklist Print

August-27-12 10:48:50 AM

Work Order ID: 77282

Parent Item:

D212-664-207

Parent Item Name: Crosstube Low Standard Aft

77282

D212-664-207

Start Date: 27/08/2012

Required Date: 10/09/2012

Start Qty: 1.00

Required Qty: 1.00

AN6-41A

Purchased

No

255

Each 89.0000

2 2

**

JB 12/10/30

SMP

Location	Loc Qty	Loc Code	
ST340	50		
122407	50		122407
ST342	39		
120423	9		
121825	30		

											DQA:	Date	e: _	•
NCR:	Yes	/ No				WORK ORDER NON-C	O	NFORM	MANCE / UPDATE		OA CI	Det		•
											QA Closed:	Date	e:	
Work Ord	er.					DISPOSITION	ı		AGAI	NST DE	DEPARTMENT/PROCESS			
Work Ord	٠					Rework	1		Skid-tube Crosstu	ıbe		Water Jet	\neg	Engineering
Part I	No.					Scrap		ŀ	Machining Small		Prod. Eng. Coor.			Quality
	•					Use-as-is Thermoforming Finishing			ing	Rec/Store/Packaging			Other	
NCR I	No.					Work Order Update Large Fab Compos								
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Root						ption of work order update	1	nitial	Action		Sign &			
Cause		Date	Step	Qty	C	or Non-conformance	Ch	ief Eng	Description		Date	Verification	1	QC Inspector
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Landi	ing (Gear				General		,			7	-	1	
		Bending				Bend		Grain		<u> </u>	Ovalized			Pressure/Forced
		Centre No	ot Conce	ntric to	o/s	BOM/Route		Hardwa	re	<u> </u>	Over/Under	+		Temperature/Cure
		Cracks				Broken/Damaged		Inspect	on Incomplete		Part Incorre	ct	\rightarrow	Weld
		Crushed/	Crimped			Burrs		Instruct	ions Incomplete/Unclear		Part Lost/M	ssing		Wrong Stock Pulled
	Ш	Cuffs				Contamination		Mainte	nance		Part Moved			
		Heat Trea	it			Countersink		Mislabe	led		Positioned V	Vrong		
		Inspectio	n Strip in	Tube		Cut Too Short		Misread	i		Power Loss/	Surge		Other
		Ripples in	Bend			Drill Holes		Offset						

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

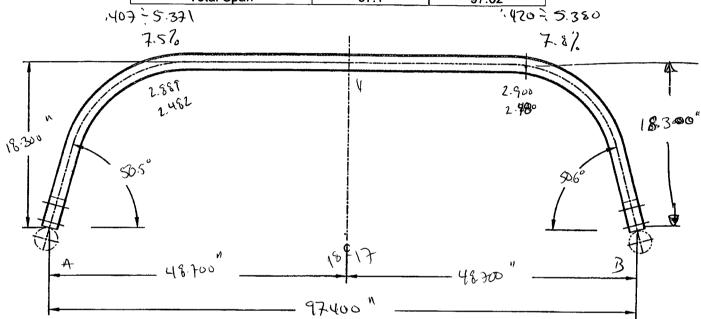
Drawing

Finish

DART AEROSPACE LTD	Work Order:	77282
Description: Crosstube Low Aft (205/212)	Part Number:	D212-664-207
Inspection Dwg: D212-664-247 Rev: B		Page 1 of 1

TOTAL STREET

Required Dimension	Min	Max
Height	18.16	18.42
1/2 Span	48.55	48.81
Angle	49	52
Total Span	97.1	97.62



Comments							
Sime	AZ_	7.5%	crushing	\bigcirc	18 passes		
midple	2	U P	93821				
Sina R	2	7.8%	crushin	(C)	17 PASSES.		

QC15 Inspection	(OAS)
Date	16 12/12/18
	15 20 1611011

Rev	Date	Change	Revised by	Approved
Α	08.02.29	New Issue	KJ/JM	
В	10.04.01	Dwg Rev updated	KJ XI	//
			()	

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES								
DATE	STEP	PRO	OCEDURE CHAN	IGE	Ву		Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
Part No	art No: PAR #: Fault Category:		jory:	NCR: Yes No DQA: Date:						
	Res	olution:	on: Disposition: QA: N/C			Clos	losed: Date:			
NCR:			WORK ORDE	R NON-CONFORM	ANCE (N	CR)				
DATE	STEP	Description of NC	Corrective Action Section			Sign &		cation	Approval	Approval
	0121	Section A	Initial Chief Eng	Action Description Chief Eng		n & ate	Secti	ion C	Chief Eng	QC Inspector
						•				
•										

NOTE: Date & initial all entries

Item	Qty -247	Qty -247B	Part Number	Description	
1	Ж		D212-664-247	CROSSTUBE ASSEMBLY (205/212 LOW AFT)	
2		х	D212-664-247B	CROSSTUBE ASSEMBLY (214 LOW AFT)	
_3	_1	1	D6008-132	CROSSTUBE	
4	2	2	D2940-1	SUPPORT	
5	4.	4	D3595-063-530	RUBBER CUSHION	
6	2	_ 2	D3660-1	CUFF	
7	4	4	MS21920-28	CLAMP (OR MS21920-30)	
8	44	44	CR3212-4-06	RIVET (OR M7885/3-4-06)	
9	A/R	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC 299-947-100, TYPE II, CLASS 2 ADHESIVE)	
10	A/R	A/R	SIKAFLEX-241/-291		

GENERAL NOTES:

D

1) MATERIAL MANUFACTURED FROM D6008-132

FINISHED LENGTH = 128.28820.020 (BEFORE BENDING/TRIMMING)
2) FINISH: CHEMICAL CONVERSION COATPER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2

PAINT OUTSIDE PER DART QSI 005 4.2 TOLERANCES ARE PER DART OSI 018 UNLESS OTHERWISE NOTED UNITS: INCHES UNLESS OTHERWISE NOTED.

BREAK SHARP EDGES: 0 005 TO 0 010 MAX.

IDENTIFICATION: SCRIBE DART PART NUMBER "D212-664-XXX" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.

7) WEIGHT D212-664-247 = 36.6 bs (PER IIN-D212-664) D212-664-247B = 36.6 bs (PER IIN-D212-664)

PART IS SYMMETRIC ABOUT CENTERLINE.

WHEN MACHINING TAPER, RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALY, TRANSITION SHOULD

10) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D., EXCEPT UP TO 10% IS ALLOWED IN AREA NOTED.

11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.

12) INSTALL D2940-1 SUPPORT USING 0.03* TO 0.05* THICK LAYER OF MACNOBOND 6398 TO THE SURFACE OF D2940-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015 LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING

13) INSTALL MS2 1920-28 CLAMPS (OR 30) WITH D3595-063-530 RUBBER CUSHIONS TO SECURE THE D2940-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE OF CROSSTUBE SUPPORT

14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0 005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE

15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

16) INSTAL D3660-1 CUFF AFTER CHEMICAL CONVERSION COAT BUT BEFORE PAINT, WITH A LAYER OF SIKAFLEX-241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT BETWEEN CUFF AND CROSSTUBE. SEAL EDGE OF CUFF TO ENSURE NO GAPS.

17) TOUCH-UP HOLES WITH CHEMICAL CONVERSION COAT.

SHOPLIFY RETURN TO ENGINEERI 30 UNCONTROLLED COPY SUBJECT TO AVERAGENT WITHOUT VALLE WORK 12 TR NO. 7 7282 M.L.J 11/12/01

DEO ATTACHED

D

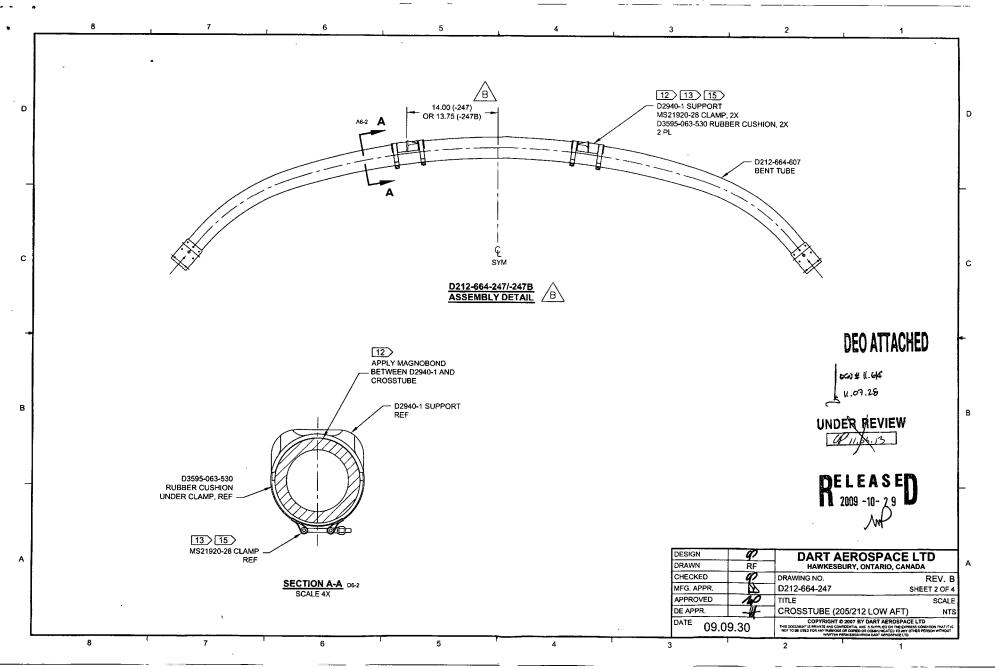
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8		E GENERAL N ENT STANDAI	RE	09.09.30	
Α	NEW IS		CP	07.07.07	
REV.	DESCRIPTION				DATE
DESIGN		P	DART AEROSP	ACE	LTD
DRAWN		RF	HAWKESBURY, ONTAR		
CHECK	ED	97	DRAWING NO.		REV. B
MFG. AF	PR.	77	D212-664-247		SHEET 1 OF 4
APPRO	/ED	140	TITLE		SCALE
DE APPR. CROSSTUBE (205/212 LOV			V AFT)	NTS	
DATE 09.09.30			COPYRIGHT © 2007 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONTROL THAT, AND IS SUPPLED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR AMY PARTICLES OF CONTROL AND ISSUED FOR THE PERSON WITHOUT WRITTEN POWERSOM FIRE BUILD HE THAT PRIVATE TO THE WRITTEN POWERSOM FIRE BUILD HE THAT PRIVATE TO THE		

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES						*****	*		
DATE	STEP	PRO	CEDURE CHA	NGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector		
								•			
Part No	•	PAR #:	Fault Cate	egory:	NCR: Yes	No DQ	A:	Date: _			
	R	esolution:	Disposition:				QA: N/C Closed: Date:				
NCR:		1	WORK ORE	ER NON-CONFORMA	NCE (NC	R)			White and Artifaction and		
DATE	STEP	Description of NC			on B	Verifi	cation	Approval	Approval		
	U.L.	Section A	Initial Chief Eng	Action Description Chief Eng	Sign Date		tion C	Chief Eng	QC Inspector		
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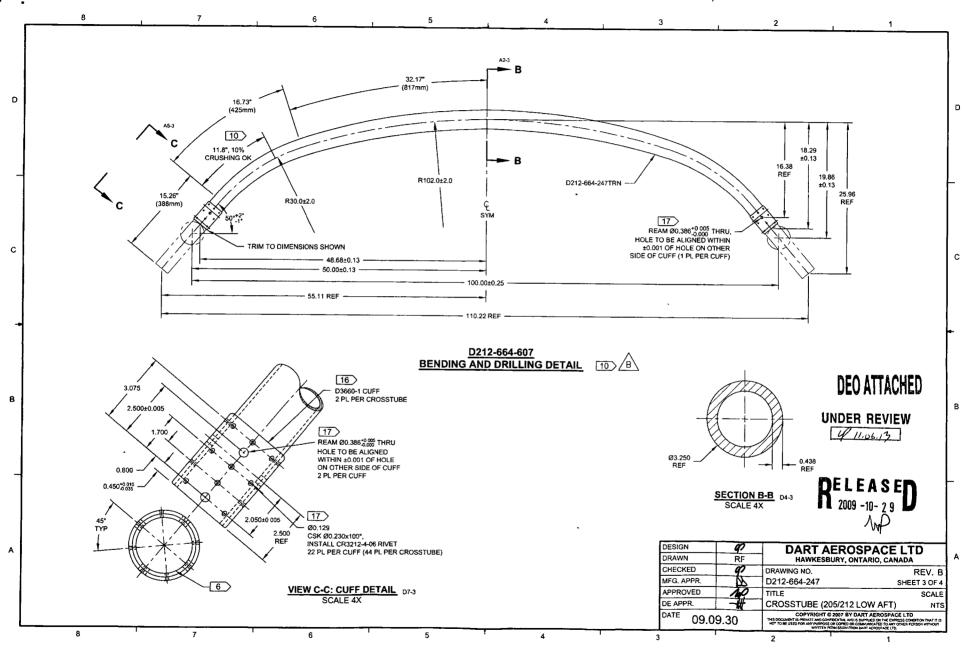
NOTE: Date & initial all entries



Dart Aerospace Li

W/O:			W	ORK ORDER CHAN	GES			• • •		
DATE	STEP	PRO	OCEDURE CH	ANGE	Ву	Da	ate Qty	Approval Chief Eng / Prod Mgr	Approváľ QC inspector	
								1 Tod Wgr		
						1				
Part No	art No: PAR #: Fault Category:				_ Date:					
	Re	Resolution: Disposition:							e:	
NCR:		•	WORK ORI	DER NON-CONFORM	MANCE (N	CR)				
DATE	STEP	Description of NC	<u>-</u>		ection B	,	Verification	Approval Chief Eng	Approval QC Inspector	
DAIL	JILF	Section A	Initial Chief Eng	Action Description Chief Eng	otion Sign & Date		Section C			
										

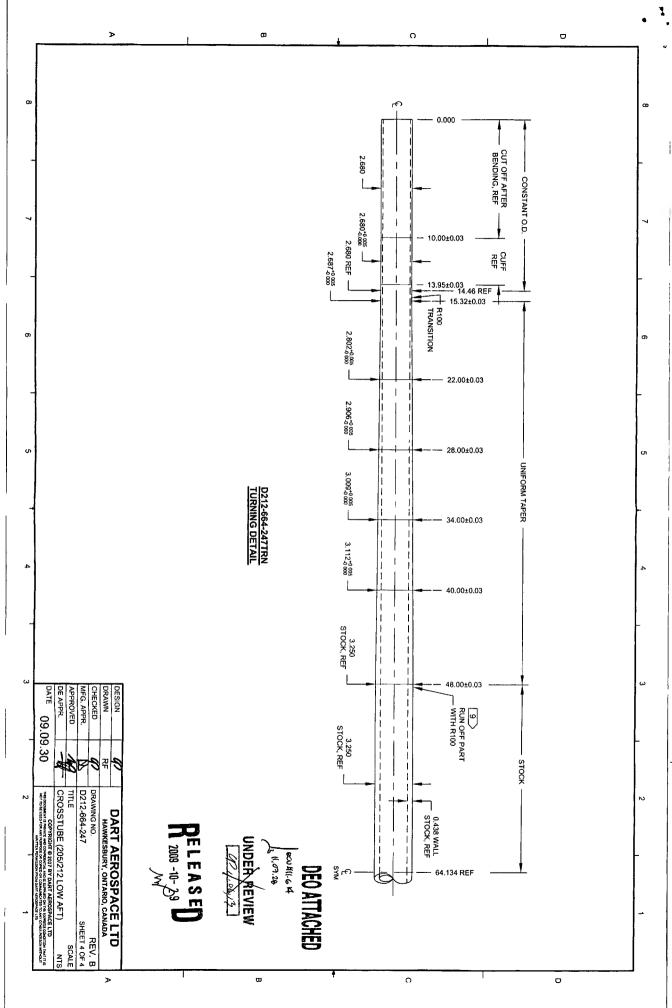
NOTE: Date & initial all entries



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W/O:			W	ORK ORDER CHANG	SES				•
DATE	STEP	PRO	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approvat		
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Part No		PAR #:	Fault Cate	gory:	NCR: Yes	No DQ	A:	_ Date: _	·····
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DATE	CTED	Description of NC	1		etion B	Verifi	cation	Approval	Approval
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign Date	& Sec	tion C	Chief Eng	QC Inspector
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NOTE: Date & initial all entries



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W/O:			W	ORK ORDER CHA	ANGES				<u> </u>
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Part No	:	PAR #:	Fault Cat	egory:	NCF	R: Yes N	lo DQA: _	Date: _	
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NCR:		\	WORK ORE	DER NON-CONFO	RMANCE	(NCR)			
DATE		Description of NC	Corrective Action Section		Section B		Verification	n Approval	Approval
	STEP	Description of NC Section A		Action Descrip Chief Eng	otion Sign & Date		Section C	Chief Eng	QC Inspector

NCR:		WORK ORDER NON-CONFORMANCE (NCR)									
		Description of NC	Corrective Action Section B			Verification	Approval	Ammanal			
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date	Section C	Chief Eng	Approval QC Inspector			
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NOTE: Date & initial all entries

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DRAWING NO. D212-664-247	TITLE	REV. B E ASS'Y (205 LOW AFT)	DART AEROSPACE LTD ENGINEERING ORDER	1		CALE
DRAWN (CHECKED A>S	MFG. APPR.	D212-664-247-B-1 APPROVED W	SHEET 1 OF 1 DE APPR.	NTS
DATE 11.0	7.15	DATE 11.67.70	DATE 11.07.21	DATE 11/07/2)	DATE 11.07.21	

PURPOSE:

REPLACE MAGNOBOND WITH PROSEAL.

CHANGE:

IS:

ltem	Qty -247	Qty -247B	Part Number	Description
9	A/R	: A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

WAS:

	L		[19]	
9	A/R	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023
l				ADHESIVE (TEXTRON/BELL SPEC. 299-947-100,
				TYPE II, CLASS 2 ADHESIVE)

NOTE 12 & 15, SHEET 1 IS AMENDED AS FOLLOWS:

IS:

- 12) TO INSTALL D2940-1 SUPPORT: ABRADE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.

WAS:

- 12) INSTALL D2940-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2940-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.



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Dart Aerospace Ltd WORK ORDER CHANGES W/O: **Approval** Appr QC Inspector DATE STEP **PROCEDURE CHANGE** By Qty Date Chief Eng / Prod Mgr ______ PAR #: _____ Fault Category: ______ NCR: Yes No DQA: ____ Date: ____ Part No: Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: ____ WORK ORDER NON-CONFORMANCE (NCR) NCR: **Corrective Action** Section B **Description of NC** Verification **Approval Approval** DATE **STEP** Sign & Action Description Initial Section A Section C Chief Eng QC Inspector **Date** Chief Eng Chief Eng

NOTE: Date & initial all entries



LIQUID PENETRANT TEST REPORT

P- 10176

ACONEN						PAGE	1 OF /
CHENT	Dot	Perospace		DATE	act 23 20		AM PM □
CLIENT				ACUREN JOB NO	0/		
ATTENTION	CHANTELL	Livida, Av Berdeen st	37	PO/WO No.	188-12-CE	25	
ADDRESS				Work Location	4		
•	HAWKes60	uny, on		 ·			= 2
	0+	<u> </u>			D. <u>ASH1 1417/a</u>	REV./DAT	- 200
PROJECT	•	Ulvorscent	Liguid Per	netrant Ins	pection		
ITEM(S) EXAMINED	see Be	elau					
JOB DESCRIPTI	ON	PROCEDURE No.	LT-000 REV./DA		TECHNIQUE NO. LT-X		E 2007
PART NO.				MATERIAL A	uminium/s/s	THICKNESS _	
SCOPE Per/	ormed a	wet Fluo	L.P.I on	100% of	the extern	el Surf	ace
		Mentionne					
TEST DETAILS	y 10 - 10	<i>1 102//12 1: 1</i>					
METHOD	e fue	ORESCENT	☐ VISIBLE	WATER WAS	H 🗆 SOLVE	NT REMOVABLE	☐ POST EMULSIFIED
FAMILY BRAND /	Yacna Flux				N <i>379</i> ∂ □ OUTPU		☐ AMBIENT < 2 fc
PENETRANT	21-67	MINIMUM DWELL			☐ FLASHLIGHT ☐ TROU	BLELIGHT 🖸 OUT	2UT>100 fc @ SURFACE
PENETRANT REMO		MINIMUM DRY TIM		IN. OTHER	N 1098866	CAL DU	E DATE OCT 28 2012
DEVELOPER TYPE	5K0-62 Non Ac	MINIMUM DWELL		IIN. LIGHT METER S/	1070000	OAL DOI	- Dilleon of Police
TEST SURFACE		OEOOS & MOCCOO	<u> </u>				
SURFACE CONDITION		OUND A	S WELDED	☐ MACHINED	☐ SHOT BLASTED		LEAN BARE METAL
SURFACE TEMPERA	ATURE 🔲 < - 4°C/	/ 20°F □ -	4°C/ 20°F TO 10°C	/50°F	2 10°C/50°F TO 52	2°C/125°F □ >	• 52°C/125°F
RESULTS-	(METRIC	C IMPERIAL)				~ ~ ~	
ITEM	CON	MMENTS	ACCEPT REJ	ECT			
1 clevis	S ASS RN. EN	16 Mount WOID	9030	_ ITEM ID	04141-043		
2 11		Wo ID	9034	ITEM IO	D4141-041	$\times \times \times$	$\langle \times \rangle \langle \times \rangle$
3 CROSS	stube	WOID 77			D212-664-6	207 APT	
	stube (WO ID 86		THEM TO	0212-664-6	207 AFT	
	stube	WOTO 90		The same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the sa	0212-664-9	A 40+	
	stube	WOID 901		THEILID	DOG-801 O	137 150	
6 CRC	Diuge	WUTU 101	70	- ITEMIO	D212-664-6	OF MIN	
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No relevant	indication	urs de tected	HS per			\times	$\langle \times \rangle \langle \times \rangle$
applicable	Stendert G	the time of	Paspectron				
(Find 4 ta	ding Mak o	neach clev	is itss)	$-\times$		531	
accepted	by inceneu	ing / O.C.			JAY FULL		Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Samuel Sa
Scope of Services	7	7	vices provided for in writing.	Under no circumstances shall	such services extend beyond the pe	erformance of the requested	services. It is expressly understood nded nor can they be construed as
that all descriptions, com	ments and expressions of	opinion reflect the opinions or d	observations of Acuren Group ities of the owner/operator a	nd the owner/operator retains	complete responsibility for the engi	ineering, manufacture, repai	nded nor can they be construed as ir and use decisions as a result of th
data or other information	provided by Acuren Grou	ıp Inc. In no eveni snaii Acuren	i Group inc. s ilability in resp	iect of the services referred to	terest exceed the amount party		
In performing the service implied, is made or intend	s provided, Acuren Group	Inc. uses the degree, care and	skill ordinarily exercised und	ler similar circumstances by ot	hers performing such services in th	e same or similar locality. I	vo other warranty, expressed or
SIGNATURES	dea by Acuren Group Inc.						
					JCX -	DTR# E-DC	375
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NAME (PRINT):	4/	example Mile	CHAND			NAME	INITIALS
INAME (FRINT).		1 ST TECHNICIAN	7	2 ^{NO} TECHNICIAN			
1	CGSB			SB LEVEL SN SB REG. NO	T LEVEL		
i	CGSB	REG. NO	7.6 CGS	D NEG. 140			